

AMERICAN VETERINARY REVIEW,

JANUARY, 1888.

EDITORIAL.

APPEAL ON BEHALF OF THE AMERICAN VETERINARY COLLEGE FUND.—An interesting development in the history of that institution—ought to have transpired long ago—good judgment of the board of directors—the present accommodations not up to the requirements—the history of the college answers for its future—the alumni have largely contributed—the directors also—but little more needed—shall the work of building begin soon, or what?—let every one work for it. BACTERIOLOGY—HOG CHOLERA.—Did we commit an error in our last? In his letter Dr. E. Salmon says we did. ANIMAL ORIGIN OF CONTAGIOUS DISEASES.—An important subject of inquiry—scarlet fever investigated—Dr. Klein's—Dr. Strickler of N. J.—the importance of his experiments—can his conclusions be all accepted?—we begin the publication of his long paper—our principal objections to one of his suggestions. ETHICAL INQUIRY.—Supposing the Ontario Veterinary College should issue fellowship, what of it?—its circular says nothing about it. HONORARY TITLE.—Our answer to the inquiry. CROWDED PAGES.

APPEAL ON BEHALF OF THE AMERICAN VETERINARY COLLEGE BUILDING FUND.—A pamphlet received from the Board of Directors of the American Veterinary College, which we copy in another place, relates to a subject which should strongly commend itself to the attention of veterinarians at large, and especially to the alumni of the institution from which it emanates, and who more than others, should feel a special interest in the matter. It is entitled, "*An appeal to the People of the City and State of New York on behalf of the American Veterinary College Building Fund.*"

Our object in reproducing this pamphlet is that it may accompany our emphatic and hearty endorsement of the recommendation

which it conveys, and to refer briefly to the record of the institution in question, in respect to the good work it has accomplished in the past, and to the guarantee which such a record must offer of a larger and better performance in the future. With improved facilities and increased appliances, who can doubt that what has been already effected by the persistent energy and strong will of its officers, without extraneous assistance, will, with new means at their command, be largely augmented and emphasized, and that the American Veterinary College will amply vindicate its claim to the title of the true *Alma Mater* of veterinary science in America?

This movement of the Directors is well judged and wisely executed, and any possibility of failure of success should be contemplated only with regret and mortification. Indeed, it is to be feared that such a failure might even involve the permanent existence of the College; and who can anticipate the possibility of such a catastrophe with patience and equanimity?

The accommodations, the facilities, the capacity and the will for the performance of the peculiar work of such an institution have been put to the extremest tests, and have never been found lacking or inadequate, and no one can successfully dispute the title of the College to that recognition which is now solicited by its officers as its rightful claim. It is obviously something more than a pretension put forth by a mere association of private individuals, or a mere personal solicitation for aid in a self-seeking enterprise.

Only a comparatively small amount of money will now be required for the purpose contemplated. Some of the alumni of the college, with the aid of generous friends, have already contributed largely towards the end in view, and several thousands of dollars have been subscribed by the Board of Directors. But little more will be necessary to raise the figures to an amount sufficient to enable them to proceed in the work of breaking ground on the site which has already been secured, and which is now the property of the college.

Shall the progress which has been hitherto accomplished become only a reminiscence of so much wasted energy, or shall the

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coming year witness the opening of the new building in New York, destined to form the home of an institution which to this day has provided veterinarians to every scientific institution in the country where the services of accomplished teachers and practitioners has been demanded? Every friend of veterinary medicine in the United States will watch the result of this appeal with interest, and we are sure will not be likely to do so without also remembering the admonition of Hercules in the fable, and putting his own shoulder to the wheel.

BACTERIOLOGY—HOG CHOLERA.—In our allusions in the editorial department of last month's REVIEW, to the work of Professor Billings and Dr. Salmon, in their investigations of the nature of hog cholera, we took occasion, in referring to their respective claims to priority in the discoveries which have been hitherto made—possibly from a somewhat careless interpretation or misreading of the published statements—to accord the credit of precedence to Dr. Billings.

Dr. E. Salmon, very properly looking after what he considers to be the justice of his own claims in the premises, replies to our remarks in a long letter of vindication, which is of course entitled to a place in our columns, and which we print below. This the text of the letter:

U. S. DEPARTMENT OF AGRICULTURE,)
BUREAU OF ANIMAL INDUSTRY,)
WASHINGTON, D. C., Nov. 19, 1887.)

Editor of American Veterinary Review:

DEAR SIR.—In your editorial in the November number of the REVIEW I find a sentence which certainly calls for a protest on my part. Referring to the investigations of hog cholera, you say, so far as you have been able to gather from the writings of Dr. Billings, that he and the writer have "quite failed to agree upon the point of the true origin of that disease; if indeed, their disagreement be not rather on the question of priority of discovery. Dr. Billings, while giving due credit to Dr. Detmers, who from lack of proper instruments was unable to positively realize the nature of his discovery, claims for himself, and we believe rightly, and to his researches, the position of first discoverer."

In this sentence you refer, as I understand it, to priority in the discovery of the bacterium of hog cholera. If I am correct in this, I can only express my astonishment that one who has followed those investigations as closely as the talented editor of the REVIEW should be led, by the writings mentioned, to express such an opinion.

In reference to Dr. Detmers, it is incontestible that he had instruments sufficient to determine the microscopical characters of any microbe he discovered.

The statement that he worked entirely with water immersion lenses, is not correct. He had the one-tenth and one-fifteenth objectives of Tolles and the one-eighteenth of Zeiss, all homogenous immersion, which are as good as any lenses now in use. (See article in *American Naturalist*, 1882, pages 199 and 200). He described a motile germ, which excludes the micrococcus of swine plague. His germ existed in the form of a sphere or of two spheres united; hence he called it bi-spherical. This certainly is not the germ of hog cholera. No one could say this more distinctly than Dr. Billings in his letter on Texas fever (page 336, REVIEW for November), where he speaks of a germ which he says cannot be differentiated under the microscope from the hog cholera germ. He says: "*The germ is not a diplococcus; it has not a figure 8 form.*" If anything more were necessary to disprove this nonsense as to Dr. Detmers' claims to priority, it may be found in the last report of the Ohio State Agricultural Experiment Station, where that gentleman speaks of having received a culture of the bacterium described in my reports of 1885 and 1886, and states that it is not the same germ which he regarded as the cause of hog cholera. Now, if you will turn to page 212 of the Report of the Bureau of Animal Industry for 1885, you will find a very full description of the bacterium of hog cholera, which was written and published before Dr. Billings began his investigations of this disease. With this before you I do not see how you can give him credit for priority of discovery, whatever else you may see in his work and writings.

If you have read the screeds which Dr. Billings has published in the daily newspapers of Nebraska by the page, in regard to the investigations of hog cholera, you must understand why I have paid no attention to them. I think you will agree with me, that the most charitable explanation of the language used in his writings is, that they are the product of a disordered brain. If the editorials of the REVIEW are based upon such literature, however, I must occasionally interpose with a mild objection, when my work is questioned. I will simply add that so far as I have been able to gather from Dr. Billings' extremely diffuse and bombastic writings, he has made very few experiments and has proved nothing that was not previously recorded from the results of experiments in this Bureau. When he differs from our conclusions, he is either plainly wrong or without any basis of fact. The motile germ of hog cholera is not identical with the non-motile germ which causes the German schweineseuche, as Billings thinks; and I venture to assert, it would not be mistaken for it by any one even tolerably well acquainted with the different species of micro-organisms. Not only is there the fundamental difference that one moves rapidly in liquids, while the other is incapable of motion, but they have a very different appearance under the microscope; they stain differently, and produce very different lesions when inoculated upon animals.

I have not the time to point out the details of these differences, but I mail you a copy of the Report of the Department of Agriculture for 1886, in which you will find, from pages 603 to 684, a very clear statement of the facts. I would refer you particularly to pages 674, 681 (last paragraph), 682 and 683. I am sorry to say that the Report of the Bureau of Animal Industry for 1886 has not yet been received from the Government Printing Office, and consequently I have not been able to send it to you.

Very respectfully,

D. E. SALMON.

ANIMAL ORIGIN OF CONTAGIOUS DISEASES OF MANKIND.—

The question of the origin of certain diseases of the human constitution which appear to be derived from related affections in the lower animals, has for the last few years occupied the attention of both physicians and veterinarians, and the publication of much valuable literature has at various times given evidence of the interest of the subject, and shown the results of the minute observations and important discoveries which have rewarded the investigations of the students and scholars whose researches have tended in this direction.

Of the diseases of this class which have attracted the largest amount of attention, on both sides of the Atlantic, probably none has excited a more wide-spread interest or become the subject of more careful and earnest study than scarlatina.

Numerous observations and experiments have been made in this direction in England, notably by Dr. Klein, which, though not admitted as conclusive, and even controverted by other English authorities, are all familiar to veterinarians. The reports published by Dr. J. Strickler, some years ago, on the same subject, are also strong evidences of the interest which the subject has excited on our own continent; and a paper read by that gentleman at a recent meeting of the Academy of Medicine in New York, on "Foot-and-mouth disease, and its relation to human scarlatina as a prophylactic," is of so interesting a character that we are induced to reproduce it in the columns of the REVIEW, and accordingly begin to reprint it in our present number, in which it is copied from the *Medical Record*. It will doubtless be read with interest, and while we cannot adopt the conclusions to which the author seems to have been led by the experiments reported, we are constrained to accord to the Doctor great credit for the labor he has undertaken, and, so far, accomplished.

To one point, and one which involves considerations of great importance, we feel compelled, with Professor Law, who participated in the discussion of the paper, to interpose, as sanitary veterinarians, a most decided objection. It is, that if foot-and-mouth disease virus is necessary to decide its prophylactic effect against scarlet fever, it is better that the experiments should be instituted

abroad than in this country. The wide-spread prevalence of that disease in America amongst our ruminants would be a too serious danger to our national wealth.

ETHICAL INQUIRY.—A question was propounded to us, under this title, in our last number, to which, hoping to receive certain information from the institution directly interested in the matter, we failed to make a reply.

We regret to be compelled to say that we are at the present time still unable to satisfy our inquisitor. Whether the Board of Examiners of the Ontario Veterinary College have or have not created Fellowships, can only be answered by the gentlemen who constitute that board. By what authority such degrees as have been referred to are conferred, we are uninformed, though we conceive that with an organization such as is possessed by that institution, as a private and independent establishment, there can be no existing authority with power to prevent its conductors from determining their own course. And if they see fit to do as they have done, what then? What of it? As to how many persons have received the degree in question, we have no knowledge.

A careful reading of the last announcement and circular of the Ontario Veterinary College fails to throw any light on the question presented to us by "Ethics."

HONORARY TITLE.—We have received the following inquiry:—

DEAR SIR: *Will you please state, through the columns of the REVIEW, the meaning of "Honorary Graduate of a College."* Respectfully, SUBSCRIBER.

Honorary degrees, as we understand the matter, are titles awarded to professors in universities, or to medical or other professional magnates, in acknowledgment of or as rewards for the service they may have rendered to the cause of science in the pursuit of their special labors and the performance of their special duties. *Colleges*, in the true sense of the term—that is, as mere educational establishments—seldom, if ever, grant such a degree; and when it is bestowed, we believe it is only upon those

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who have been previously graduated by an institution where a similar educational course obtains, and then it is considered not as a *graduating* document, but as one of membership merely. As far as veterinary honorary degrees of this nature are concerned, we know of but one institution which may be considered as having granted them, viz.: the Royal College of Veterinary Surgeons in England; and certainly in this case the title is not one of *graduation*, as implied in the inquiry, but of fellowship only to persons already graduates of veterinary medicine.

CROWDED PAGES.—The preoccupation of our pages in the present number excludes several articles of importance and interest, which we would have liked to include in our table of contents for the current month. These will receive justice in our February number. Among them, a communication from Dr. Gadsden and an offer made by the Patho-Biological Laboratory of Nebraska, are matters of too much importance to be passed over with merely a single notice.

ORIGINAL ARTICLES.

APPEAL

TO THE PEOPLE OF THE CITY AND STATE OF NEW YORK IN
BEHALF OF THE AMERICAN VETERINARY COLLEGE BUILD-
ING FUND.

The millions upon millions of domestic animals in the United States represent an aggregate wealth of upwards of \$2,500,000,000, in addition to their being to us sources of food, labor, raiment, pleasure and products for exportation.

These animals are subject to disease and injury. The older nationalities of Europe have for the past century had established, under government support, large and thoroughly appointed educational institutions for the qualifying of men, by medical training, to care for the domestic animals, when sick or injured; to guard against the importation of contagious diseases; and to arrest such diseases by intelligent and scientific methods of procedure when they do occur. More than that, the special medical

knowledge of educated veterinarians enables them to protect men from diseases communicable from animals, by the prompt recognition of such diseases in the latter.

In European countries the veterinary profession constitutes bodies of educated, scientific and respected professional men, whose fulfilled duties are a bulwark of protection to the State, a safeguard to the citizen, and a boon to suffering animals.

In 1875 the American Veterinary College was chartered and organized for the purpose of qualifying men, by a special medical education, for the practice of veterinary medicine, and, as stated by the *New York Herald*, in an editorial article of March 25, 1887, "it has fought its way to national reputation without public endorsement."

Twenty years ago an American veterinary profession did not exist; to-day, its successful national representatives are, in the main, alumni of the American Veterinary College.

The evidence of the work accomplished by the College in the past twelve years is shown by the fact that out of not more than 600 veterinary surgeons qualified to practice, and holding diplomas as such, who are to-day practicing veterinary medicine in the United States, the American Veterinary College has contributed 236, or more than one-third.

As to the efficiency of the alumni of the American Veterinary College, it may be stated that out of her 236 alumni, *fifty* of them have been or are now occupying Government or State positions or filling professorships in agricultural and veterinary institutions.

THE HOSPITAL DEPARTMENT OF THE COLLEGE has within the past twelve years treated, in the presence of the students of the College, 26,800 sick animals, horses and dogs, and over 8,800 operations have been performed.

FREE CLINICS have been held since 1875, to afford the poor, who cannot remunerate the services of a veterinary surgeon, an opportunity to obtain relief for their suffering animals. At these clinics, held twice a week throughout the year, there have been treated during the past twelve years over 5,000 sick animals, upon whom over 1,300 operations have been performed.

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In the Hospital, patients are admitted for care and treatment during their illness, thereby affording the best possible opportunities for the instruction of the students of the College. During the past twelve years over 5,500 horses and 600 dogs have been inmates of the hospital.

All this collegiate and hospital work has been quietly carried forward in our midst by the trustees and faculty of the American Veterinary College, and by it, as justly stated in the *New York Herald* editorial before quoted, "New York, the birthplace of veterinary medicine, veterinary societies and veterinary journalism in the United States, has a school which has sent forth hundreds of able practitioners, and made an enviable name for itself without any assistance from the public."

The work of the American Veterinary College and the success of her alumni as professional men, have naturally drawn attention to the subject of veterinary medicine. The University of Pennsylvania and Harvard University have each established a Veterinary Department. Of the former the *New York Herald* says: "The success of the American Veterinary College has stimulated educational work of a similar kind in other parts of the Union. A veterinary school was started in Philadelphia three or four years ago, and it has made rapid progress, because the people have been generous towards it. The city of Philadelphia gave it twenty lots of ground; the sum of fifty thousand dollars was raised, and it is just about receiving one hundred thousand dollars from the State.* If we are to keep ahead of Pennsylvania in veterinary education, the people will have to put their hands in their pockets. The city which gives shelter to Maud S., for whom one hundred thousand dollars has been refused, and to thousands of horses of many degrees of value, should not hesitate to subscribe one hundred thousand dollars for the better equipment of a college which year after year is fitting men to guard our flocks and herds from the ravages of disease."

The present accommodations of the American Veterinary College and Hospital are now totally inadequate to meet the de-

* The Pennsylvania Legislature gave \$50,000 at their last session to the Veterinary Department of the Pennsylvania University. The appropriation, however, was vetoed by the Governor of that State.

mands upon them. From a class of 12 students during the session of 1875-'76, there were 134 in attendance during 1886-'87. The college class-rooms were so crowded as to be uncomfortable, and the hospital is obliged to send away patients for want of room.

The College has an efficient and experienced faculty, with a body of 236 alumni in the field of professional work, in thirty States and Territories of the Union, *but what is wanted is a suitable building, worthy of the City of New York and the past record of the College, to enable the institution to do its full measure of good and useful work.*

Steps have already been taken toward the accomplishment of this end, viz.:

1st. The Trustees of the College have obtained from the Legislature of the State of New York (session of 1887), specific authority to hold property to the amount of \$150,000, "by purchase or devise."

2d. Through the personal contributions of some of the alumni of the College and their friends, the College has obtained title to two lots of ground (50 x 100 feet) in West 64th Street, between Eighth Avenue and the Boulevard, upon terms that can be met by the present income of the College.

3d. At the last meeting of the Board of Trustees of the College, the following resolution was adopted:

"*Resolved*, That the Committee appointed at the special meeting of May 5, 1887, be and are hereby authorized and empowered to solicit donations to aid in the purchase of real property in the city of New York, and for the erection of suitable buildings for the use of the College; and if it shall appear to said committee impracticable to obtain donations to a sufficient amount for the purpose expressed, that then said committee be and hereby are authorized and empowered to solicit and obtain subscription monies for said purpose, to be repaid at such times, and bearing such rate of interest, and on such terms as said committee shall deem necessary or expedient to further said project."

4th. The Committee of the Board of Trustees of the College, in pursuance of the powers given them by the above resolu-

tion, have determined to solicit donations and subscriptions to the amount of \$75,000 to a fund to be known as "The American Veterinary College Building Fund:"

a. Donations from those who may feel inclined to contribute to the object set forth;

b. Subscriptions, to bear 4 per cent. interest from date of payment of the same to the College Treasurer, and redeemable from a sinking fund, to be provided for the purpose, as the Trustees may direct;

c. Donations and subscriptions will be called in, to commence building, when the same shall amount to \$40,000.

Great interest and enthusiasm have been manifested in New York city, of late years, in the horse shows, dog shows, cattle shows, etc., that have been held from time to time. This does credit to our age and our generation, giving evidence of the high standard of our civilization and our Christian virtues, which hold out the hand of kindness and give thoughtful consideration to our dumb and trusty servants. To carry out in the most efficient manner this interest and enthusiasm, these lovers of the horse, the dog, the cow, etc., should contribute to the erection of a building for the American Veterinary College, with all the necessary accommodations and appointments for the thorough education of men to care for these creatures when sick or injured.

It would be unjust to the public spirit of New York State and city to believe, after what has already been accomplished by the American Veterinary College in giving to New York State and city the proud position of the *pioneer* in the cultivation of veterinary medicine in the United States and the founder of an American veterinary profession, that they would withhold their endorsement of the work already done, in not giving the means necessary to maintain and perpetuate the position already attained.

In conclusion, the Trustees of the American Veterinary College confidently appeal for donations and subscriptions to the American Veterinary College Building Fund, upon the plan and for the purpose above set forth:

1st. On behalf of the scientific education demanded for the care and protection of our vast national wealth in domestic animals, now so inadequately cared for.

2d. That our city and State may be able to maintain her already acquired national supremacy as the birthplace and centre of veterinary education of the Union.

3d. As a humanitarian movement which is to insure the care, in sickness and when injured, of our faithful, though dumb, servants and companions.

4th. In behalf of a charity which restores to the poor man his beast—often the bread-winner for his family.

FOOT-AND-MOUTH DISEASE

AS IT AFFECTS MAN AND ANIMALS, AND ITS RELATION TO HUMAN SCARLATINA AS A PROPHYLACTIC.

ALSO, REMARKS UPON THE TRANSMISSION OF HUMAN SCARLATINA TO THE LOWER ANIMALS, AND THE USE OF VIRUS THUS CULTIVATED AS A PREVENTIVE AGENT.

By J. W. STRICKLER, M.S., M.D., ORANGE, N. J.

The disease as it affects man.—It was long ago discovered that the human subject was susceptible to the contagium of foot-and-mouth disease. The disease is contracted in one of two ways, viz., by drinking milk obtained from cows affected with the disease, or by the accidental introduction of the virus into open wounds or sores upon the hands, or other parts of the body. In either case the systematic disturbance is, as a rule, very slight, while the local lesion, in the great majority of instances, consists of an inflammatory sore throat, with or without the development of small vesicles upon the inner surface of the cheeks, lips and tongue. The cervical lymphatic glands are generally enlarged and tender. The tongue sometimes becomes swollen to a considerable degree. In some instances there has been an eruption of vesicles upon the feet and hands, in others a scarlet eruption has made its appearance upon different parts of the body. Hertwig,* during an epidemic of foot-and-mouth disease, drank daily for four days one quart of milk taken from diseased cows. In less than forty-eight hours he "began to experience slight fever, twitchings in the limbs, headache, a sensation of dryness and heat

*Ziemssen's Cyclopædia of the Practice of Medicine, vol. iii., p. 521.

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in the mouth, and an itching in the hands and fingers. These symptoms continued about five days. Then the entire mucous membrane of the mouth began to swell considerably, especially that of the tongue, upon which organ, particularly the edges of it, and also upon the inner surface of the cheeks and lips, there appeared small vesicles, never larger than a lentil, of a yellowish-white color, and filled with turbid whitish contents which were readily discharged when the vesicles were pricked, but were soon reproduced. Upon the following days the vesicles became still larger and burst; the epithelium was then detached, leaving behind dark-red erosions which gradually healed. There was, conjoined with the above symptoms, a smarting pain in the mouth upon the attempt to masticate, speak or swallow, and also an intense thirst. The vesicles upon the lips dried up, leaving in their places thin brown scurfs, which upon the tenth day after the appearance of the former fell off. Simultaneously with the development of the eruption in the mouth, numerous vesicles were formed upon the hands and fingers, which at first were of the size of a millet-seed, firm, and of a yellowish-white color, but in their further progress approximated in look to those in the mouth, healing, however, more slowly. At the termination of this process he was restored to the best of health." Two other physicians performed the same experiment upon themselves, with the same result as obtained in the case of Hertwig, except that they had no eruption of vesicles upon their hands. The symptoms thus produced by drinking fresh milk containing the contagium of the disease under consideration, vary somewhat from those produced by inoculation of the human subject with the contents of the vesicles, at least in some instances. That this is true will be shown in the record of the following cases:

About the end of August,* Mrs. X——, wife of an extensive farmer, came under my care on account of an eruption of *bright red spots*, one-eighth of an inch in diameter (covered with a thin white desquamation), which were so densely sprinkled over her body as to leave only minute interspaces of sound skin. As Mrs. X——had within the last three years suffered from hepatitis with

*Edinburgh Medical Journal, 1863, Hislop.

jaundice, I thought the eruption might be thus originated. Alterative purgatives made no impression upon the disease.

On a subsequent visit I found her husband complaining of a sore throat and mouth. Upon examination found the mucous membrane of his mouth, lips, tongue, and throat studded with small ulcers, giving off a white slough, which left behind a clean but highly sensitive cup-shaped cavity. His forehead was covered with an eruption similar to that upon the lower extremities of his wife. The eruption was never vesicular as it is in cattle. The spots made their appearance as slightly elevated, reddish prominences (papulæ), which gradually become bright red, then threw off a silvery-white scale, and gradually disappeared. Mrs. X—— had slight inflammation of the fauces. Some of the children about the house were also affected with sore throat, but the symptoms in these cases were very mild and easily overcome. At the time this disease affected the above patients the whole of Mr. X——'s cows had murrain. Mr. X—— says that, when examining one of the cows which was suffering from the disease, and while in the act of pressing back the lip, he observed two or three pimples on the upper lip to burst and eject the matter to a considerable distance, and that he received a portion on his cheek and hand. Both parties, as well as those affected in a lesser degree, had gone freely about the byres, handling the diseased cows, of which there were at times upward of a dozen ill at once, and the peculiar virulence of the symptoms in Mr. X——'s case seemed to depend upon the circumstance that the matter caught upon his hand and cheek was derived from one of the worst of the diseased animals.

The epidemic of "sore throat" which occurred at Dover, England, in 1884, furnishes still greater opportunity for the study of "foot-and-mouth disease" as it affects man.* "During the early days of February, 1884, a remarkable outbreak of sore throat occurred in Dover, England, which, on account of the suddenness of the outbreak, the severity of the symptoms, and its chief prevalence among those occupying the best houses in the town, attracted no small amount of public attention, and naturally

*Quoted from the official report of the epidemic.

provoked a large amount of interest in the investigation as to the cause thereof. Controversy waxed warm, especially when it became known that the cause of the epidemic corresponded most intimately with the track of a particular milkman, and that the milk supplied by this man was believed to be the vehicle of the specific poison occasioning the epidemic. . . .

For the purpose of ascertaining what particular taint was present in the milk which was calculated to occasion this particular epidemic, a searching inquiry was made, and the following facts collected: The implicated dairyman obtained his supply of milk from twelve cows kept on his own premises at Dover, and also from three farm establishments in the country. All these places were visited and diligent search made for any evidence of the disease among either the cows or people living or engaged on the premises.

"At one of the establishments in the country it was found that aphthous fever had broken out among the stock on January 14th, and that milk from some of the affected cows was delivered to the Dover dairyman, and, after being mixed with other milk, distributed to his customers. Moreover, it was from this infected farm alone that the Dover dairyman obtained the supply of cream furnished to his customers. At the beginning of the inquiry it was stoutly denied that any of the milch-cows had suffered from disease, and a certificate from a veterinary surgeon and inspector to this effect was obtained and published. The matter was then referred to the police, and the truth gradually oozed out, until the facts as already stated were established beyond dispute; then the farmer not only admitted the fact of the disease among the milch-cows, but confessed to the sale of their cream and milk in Dover, not only to the dairyman whose milk was especially implicated, but also to another milkman, on two separate occasions, among whose customers a second simultaneous outbreak occurred; thus a second experiment was performed with this tainted milk among another set of individuals, with like results to the first, contributing additional evidence of the presence of poison in the milk supplied from the infected farm. Thus it was clearly established that the sufferers in this epidemic partook of milk which had been

secreted by cows suffering from foot-and-mouth disease. During the week ending February 9th, two hundred and five persons were attacked with this disease. The majority of persons who suffered during the Dover epidemic presented two prominent symptoms in common, viz; *inflammatory sore throat and enlargement of the cervical lymphatic glands*; but the lesions produced varied considerably in different cases. The vesicular eruptions were followed either by a raw, red, œdematous appearance of the mucous membrane, or white patches, and the ulcers which supervened assumed in many instances a chronic character, with thick, puckered edges, and were a long time in healing. When the inflammation went on to suppuration recovery was much slower than after common quinsy, and the enlarged cervical glands remained tender, red, and swollen long after the throat symptoms had subsided, *resembling in this aspect the sequelæ of scarlet fever*. Erysipelas and purulent formations were also concomitants of the epidemic. In some instances the feet of those who suffered were swollen and painful, simulating rheumatism; and in one instance eczema occurred between the toes of the feet, the affection being accompanied with very fetid exhalation. A fatal termination resulted in the cases of two children who had very bad throats and mouths, with the extension of the disease to the respiratory tract, their deaths being, in the opinion of the medical attendant, due to the poisonous effects of the milk. Two persons, who labored under chronic kidney disease, were respectively attacked with sore throat and died on the same day; other people in the same houses suffering also from the epidemic sore throat."

Having thus traced the course of foot-and-mouth disease as it occurred in the cases quoted, and thinking it manifested a certain resemblance to human scarlatina, I asked Dr. M. K. Robinson, medical officer of health of East Kent, England, if he would call upon the various persons who had been affected with the "epidemic sore throat," and ask them whether they had had scarlet fever either before or after having the "sore throat" in 1884, my object being to determine whether the human system, having been attacked by one of these diseases, would, as a result, become fortified against the contagium of the other.

Incident

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No.
of
case.

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TABLE.

Incidence of Scarlet Fever among Persons who suffered from "Epidemic Sore Throat" due to use of Milk from Cows suffering from Aphthous Fever, which Epidemic occurred in Dover in 1884.

No. of case.	Scarlet fever previously.	Scarlet fever since.	Remarks.
1	.....	.....	Four other members of same family, who had previously had scarlet fever, escaped epidemic of sore throat.
2	.....	.....
3	.....	.....
4	.....	.....	Five other members of this family, who had previously had scarlet fever, escaped throat epidemic.
5	1	.....
6	.....	.....
7	.....	.....	Two members of same family, who had previously had scarlet fever, escaped throat epidemic.
8	1	.....
9	.....	.....
10	1 ?	.....	Believed to have had scarlet fever, with other members of family, when young.
11	?	?	Gone away, no address found.
12	.....	.....
13	.....	.....
14	.....	.....
15	?	?	Gone away, no address yet found.
16	?	?	
17	?	?	
18	.....	.....
19	1 ?	.....	Not quite certain, but thinks to have had scarlet fever when young.
20	?	?	Gone away, address not yet found.
21	.....	.....
22	.....	.....
23	.....	.....
24	.....	.....
25	1	.....	Believed to have had scarlet fever when young.
26	.....	.....
27	.....	.....
28	?	?	Gone away, address not yet ascertained.
29	.....	.....
30	1	.....
31	.....	.....
32	.....	.....	} Same family.
33	.....	.....
34	1	.....	} Same family; 34 had scarlet fever when young; 35 uncertain.
35	?	.....
36	.....	.....	} Same family.
37	.....	.....
38	?	?	} Same family. Gone away, address not yet ascertained.
39	?	?	
40	?	?	} Same family. Gone away, address not yet found.
41	?	?	
42	.....	.....	} Same family. Other members of same family, two of whom had had scarlet fever, escaped epidemic sore throat.
43	.....	.....

No. of case.	Scarlet fever previously.	Scarlet fever since.	Remarks.
44	?	?	Same family. Gone away.
45	?	?	
46	.....	.....	Same family.
47	.....	.....
48	.....	.....	Same family.
49	.....	.....
50	1	.....	Same family.
51	1	.....
52	?	?	Same family. Gone away, address not yet found.
53	?	?	
54	.....	.....	Same family.
55	.....	.....
56	.....	.....	Same family.
57	.....	.....
58	.....	.....	Same family.
59	.....	.....
60	.....	.....	Same family.
61	.....	.....
62	.....	.....	Same family.
63	.....	.....
64	.....	.....	Same family.
65	.....	.....
66	1	.....	66 scarlet fever or measles, not quite certain.
67	.....	.....
68	.....	.....	Same family.
69	.....	.....
70	?	?	Same family. Gone away, address not yet found.
71	?	?	
72	.....	.....	Same family.
73	.....	.....
74	.....	.....	Same family; consists of four children; one child, who had previously had scarlet fever, escaped epidemic sore throat.
75	.....	.....
76	.....	.....	Mild case of throat epidemic.
77	1	.....
78	.....	.....	Same household. Father, mother and servants, who had previously had scarlet fever, escaped throat epidemic.
79	.....	.....
80	.....	.....	Same household.
81	.....	.....
82	.....	.....	Same household.
83	.....	.....
84	.....	.....	Servant, cannot be found.
85	?	?	
86	.....	.....	Same family.
87	.....	.....
88	.....	.....	Same family.
89	.....	.....
90	.....	.....	Mother thinks they had scarlet fever.
91	.....	.....
92	1?	.....	Same family.
93	1?	.....
94	1?	.....	Servant, cannot be found.
95	.....	.....
96	.....	.....	Servants, cannot be found.
97	?	?	
98	?	?	Servants, cannot be found.
99	?	?	
100	?	?	

No. of case.	Scarlet fever previously.	Scarlet fever since.	Remarks.
101	} Same family.
102	
103	
104	
105	} Same family.
106	
107	
108	
109	?	} Servant, gone away.
110	} Same household. Other members of this family, three of whom had had scarlet fever, escaped throat epidemic.
111	
112	
113	
114	} Same household.
115	1	.....
116	
117	
118	} Same household.
119	
120	
121	
122	} Same household.
123	
124	
125	
126	} Same household.
127	
128	
129	
130	} Mild case of throat epidemic.
131	1	.....
132	
133	
134	} Same household.
135	1	.....
136	1	.....
137	
138	} Same household.
139	
140	
141	
142	} Same household.
143	
144	
145	
146	} Same household. Other members, four of whom had had scarlet fever, escaped throat epidemic.
147	
148	
149	
150	} Servant, thinks had scarlet fever.
151	?	
152	1	.....
153	1	.....
154	} Same household; mild cases of throat epidemic.
155	
156	

No. of case.	Scarlet fever previously.	Scarlet fever since.	Remarks.
157	Same household.
158	
159	
160	
161	
162	Same household.
163	
164	
165	
166	1	.....
167	1	Same household.
168	
169	
170	
171	
172	Same household.
173	
174	
175	
176	
177	Same family. Removed. No reply to inquiry.
178	
179	
180	
181	?	
182	?	Doubtful; do not think they had scarlet fever.
183	?	
184	
185	
186	
187	Doubtful; do not think they had scarlet fever.
188	
189	
190	
191	
192	Doubtful; do not think they had scarlet fever.
193	
194	
195	
196	
197	?	Doubtful; do not think they had scarlet fever.
198	?	
199	
200	
201	
202	Doubtful; do not think they had scarlet fever.
203	
204	
205	

These statistics were gathered two years after the outbreak of the "sore throat epidemic" in Dover. During this interval of two years 22 of the patients changed the place of their residence and could not be found, with but few exceptions, and from

these few it was impossible to secure replies. The tabulated facts concerning the remaining 183 persons show:

1st. That *none* of the persons affected with the "throat epidemic" have since had scarlet fever, *i. e.* had not had it at the time they were questioned.

2. That *members of eight families who had previously had scarlet fever escaped the "throat epidemic,"* while the remaining portion of the households developed the disease.

3. That 16 persons affected with the "throat epidemic" had had scarlet fever.

4th. That 4 of the 16 persons who had had scarlet fever had a *mild form* of the "throat epidemic."

5. That of the affected individuals 2 had had scarlet fever *when young.*

6th. That 10 of the cases were doubtful whether they had previously had scarlet fever.

May it not, therefore, be possible:

1st. That the affected persons have not since had scarlet fever because of the protective influence produced by the "throat epidemic."

2d. That the members of certain households who had had scarlet fever had thereby secured immunity from the "throat epidemic," as indicated by the fact that they escaped.

3d. That in four of the instances in which scarlatina had antedated the "throat epidemic" there was a partial protection afforded, as indicated by the fact that four of these cases were mild.

4th. That in those instances in which scarlatina had occurred in early youth the protection had become exhausted.

5th. That these two diseases may be for a time mutually protective.

It is certainly a remarkable fact that, in twenty-four or more instances, the throat epidemic failed to attack those who had already had scarlatina; also, that the few attacked with the throat epidemic who had had scarlatina, had, in one-fourth of the instances, a mild type of the epidemic disease, indicating, possibly, that the system had been so affected by the scarlatina contagium

as to become less susceptible to the virus of foot-and-mouth disease. That a certain number who had previously had scarlet fever, were attacked by the "throat epidemic," is not strange, for it sometimes happens that an individual will have two attacks of scarlet fever, with, in some instances, only a short interval of time between the attacks. On the other hand, it may be true that the twenty-four or more individuals who had had scarlatina, and escaped subsequently the sore-throat epidemic, were not susceptible to the influence of the contagium which the infected milk contained. As is very well known, there are some persons who, though many times exposed to the poison of small-pox, measles, or scarlatina, remain unaffected by such exposure. In considering the facts before us I think this truth should have its share of thoughtful attention.

(To be continued.)

THE NATURE OF THE AMERICAN SWINE PLAGUE IN REGARD TO ITS PREVENTIVE TREATMENT BY VETERINARY POLICE AND HYGIENIC METHODS.

BY FRANK S. BILLINGS, D.V.M.

Director of the Experiment Station and Laboratory of the University of Nebraska for the Study of Contagious and Infectious Animal Diseases.

[Read before the Massachusetts Veterinary Association by its Secretary, Dr. L. H. Howard.]

(Continued from page 414)

Swine plague introduced or extended over the State by means of uncleansed and non-disinfected railroad cars or other conveyances the property of common carriers.

Cases of this kind are undoubtedly of common occurrence, though I have personal knowledge of but one, in which the disease first began along the line of a railroad and gradually extended from it. The cars were used at the time to convey rails and laborers, but had been used for swine previously, and their bottoms were covered with the straw and refuse left by them, which was spread over the ground in unloading the cars.

Could the authorities of the respective States be absolutely certain that swine purchased in other States were procured in

localities in which no cases of swine plague had occurred during the previous twelve months, still they cannot be assured that the disease would not break out in such swine shortly after arrival upon or within the territory of the State on account of their having been transported in cars or other conveyances, in which swine plague-diseased hogs had been previously transported, without said conveyances having been subsequently cleansed and disinfected.

(Numerous outbreaks of this kind due to imported hogs, as well as inter-State transport, have come to my knowledge since I have been investigating this disease.)

This fact, that buyers or shippers of swine cannot assure themselves that no sick swine have been conveyed in the cars or other conveyances, not only renders a quarantine absolutely necessary for imported hogs, but suggests the necessity of State authorities organizing some method by which cars and other public conveyances used to convey live stock either into or within the boundaries of a State should be properly cleansed and disinfected under the observation of a trustworthy inspector after their use for such purposes.

Regulations to be observed when outbreaks of swine plague occur within the boundaries of a State.

All places where swine plague exists should be indicated by sign boards during the prevalence of the outbreak and for six months after it has ceased. Hog-pens or runs should be so situated that they can be well drained and exposed to the action of the sun and air.

(Thoroughly muddy runs are not as dangerous as those which practically dry out, if the disease appears in either. Filth alone is not the cause of swine plague, though under some circumstances it may help support it.) Hog-pens or runs should never be so situated that the drainage from them could gain access to the well from which animals are watered, or to running streams. Owners of hogs diseased with swine plague should be cautioned not to allow, and be held responsible for, any extension of the disease from their hogs to healthy swine belonging to other persons, when such owner or owners failed to comply with the regulations enacted for the control and prevention of the disease, such as :

1. The sale or removal of sick or healthy swine from herds, pens or runs in which the disease existed. The sale or removal of any other domestic animals from their premises that had the run of such hog-yards when swine plague existed among the hogs.

At such times owners should be forbidden allowing their horses or cattle, which are being used for driving or work over or upon any public highway, to have the run of, or from being led into or across the territory of such infected yards or runs. They should also be forbidden leaving any wagons or other farm machinery in such infected hog-yards or runs, even though the plague did not exist among their hogs at the time.

2. The removal of hay, straw, manure, offal or earth from swine plague-infested hog-yards or runs, or from such in which the disease had existed within the previous twelve months, and the conveyance of the same over any public way, or the unloading any dangerous material upon any part of such a public way should be forbidden by law.

(Owners of diseased swine should use every precaution in distributing such materials over any part of their own premises, as they may prove a source of disease to healthy hogs at any time.)

3. All hogs should be watered from wells.

a. Watering infested herds of swine, or even single animals, when diseased, from running streams, or allowing such diseased hogs to have any access to the banks of such streams, should be forbidden by law.

(That the disease frequently follows the course of and extends from the banks of such streams has been frequently demonstrated by costly experiences.)

b. Building rendering establishments or packing-houses in positions where the drainage from them can in any way gain access to running streams, should be forbidden by law.

4. Owners of swine plague-infested herds, or sick hogs, should be forbidden visiting the hogs of other persons, or allowing other persons to inspect their hogs, or enter their hog-pens or yards, unless such person was an authorized Government veterinarian or inspector.

5. The farm or house dog should be kept chained on premises

where the swine plague exists, and any stray dogs seen in or near the infested pens or runs should be shot.

6. Owners of hogs should be instructed (or, perhaps, forbidden) not to place new and healthy swine into hog pens or runs in which swine plague had existed at any time during the previous twelve months, and only then when all the hay or straw that may have been stacked in such a hog-yard or run had been consumed by other animals, and any refuse remaining had been completely burned up.

Any pens, sheds or stables in which or under which diseased hogs have been, must have been thoroughly cleaned out, and the contents of such pens or sheds completely burned up. Stables should really be so situated that the hogs could not possibly crawl under them, or any drainage from the hog-pens or yards run under them. When such has been the case, however, the stable should be raised, the refuse under it removed and burned, the bottom of the stable white washed (to which corrosive sublimate 1 to 500 parts had been added); the earth forming the bottom or under the floors of such pens or stables should be dug out to the depth of at least a foot, and then spread out in a thin layer over the hog-yard or run; the hole should then be filled with fresh earth. (It would be best to securely wall in the ground under a stable after such a procedure, so that swine could not get under it in the future and to provide for the water from the swine-pen or yard to drain in some other direction than under such a stable.) If such hog-pens or sheds have plank bottoms, the same should be removed and at once burned (this should be done upon the ground of the hog-yard when possible). When such pens or sheds have no plank bottoms, the lower boards of their sides should be removed and burned, the remainder should be whitewashed as above, three times within a period of three months.

The ground of the hog-yard or run should be plowed up and exposed to the air, and then harrowed fine when dry, three times within a period of three months after all diseased or exposed swine have been removed, or after thirty days had elapsed from the time all symptoms of illness had disappeared from the hogs, if any remained. (It will be readily seen that in most cases it

would be cheaper and more practical to place new hogs upon new land and in new sheds, but when such cannot be done the above regulations must be rigidly executed if another outbreak would be prevented upon the same grounds.)

7. In case such swine are placed upon new land great care must be taken that no person coming into any relation with them, or any teams used to convey food to them, cross the old grounds or come in contact with anything that may have been used among the diseased hogs. Tools, troughs and such things used among the diseased hogs should be burned and new ones provided for the fresh swine.

8. Owners of hogs should be warned against performing themselves, or allowing other persons to perform, any surgical operation whatever (castrating, ringing the nose, tagging the ears or branding) upon their swine when the plague existed in the immediate vicinity or among their own hogs.

9. Swine with wounds upon them or scratches should neither be placed upon previously infected lands or in such pens, nor among hogs in which the disease existed. All such swine should be at once removed from infected herds, if not already diseased themselves.

The disposal of sick and dead hogs.

1. No diseased or dead hogs should be removed from the infested premises.

2. Cremation or burning the carcasses of dead hogs until reduced to powder should be resorted to whenever and wherever possible.

3. The carcasses of dead hogs should never be thrown into running streams, or so buried that the drainage from such burial places could possibly gain access to such streams or even to wells or ponds used to water stock.

4. When cremation is impossible and burial has to be resorted to and the land is so situated that it can be done without conflicting with the previous regulation, a portion of the hog-yard or run, or land immediately adjacent to the same, should be fenced off with a solid board fence and a trench dug twelve feet deep and of a length corresponding to a space that would be occupied by

two-thirds of the hogs present. (If only a small number of hogs are present the trench should be dug deep enough to have six feet of earth over all the carcasses when covered.) As soon as any hogs have died the carcasses should be at once removed and some crude petroleum poured upon it; it should then be covered with a layer of quicklime and six inches of earth. The same should be done with each carcass. When the outbreak has come to an end the entire mass should be covered with six inches of quicklime and the trench filled up. No more hogs should be put into a single trench than would allow of six feet of earth to cover the carcasses. Such burial place should be kept securely fenced in for at least two years and sown down with some vigorously growing herbage.

When the situation of a hog-yard or run is such that a suitable burial place within or adjacent to the same cannot be had on account of running streams, wells or some other circumstance, a place must be selected as near as possible. The dead hogs should be carefully placed in a wagon and never dragged over the ground when being conveyed to such burial places. Such wagons should be cleaned and disinfected directly after being used for such purposes.

When can an outbreak of swine-plague be declared ended and the infested premises be declared free from the disease?

When all the diseased hogs have been buried; when the cleansing and disinfection of the pens, etc., and plowing up of the grounds of the infested yards has been performed according to regulation; or when there has not been a single symptom of disease among the remaining hogs after thirty days have elapsed from the complete recovery of the last sick hog, or no more sickness has occurred since the last sick hog was killed.

The above has reference only to the hogs remaining in an infested herd after the disease has run its course.

The treatment of such pens or yards, or the course to be followed in placing healthy pigs in the same, or upon the same premises, has already been given.

REMUNERATION.

Under what circumstances, or upon what conditions should

the State authorities be held responsible for outbreaks of swine plague within its boundaries?

When should the State remunerate owners of diseased or exposed swine on account of the above or on account of any action of the State authorities?

1. The State should not be held responsible for any outbreak of swine plague in domestic hogs, nor should owners have any claims for remuneration on account of any action or want of action on the part of the State authorities, when any owner or owners, or his or their representative, failed to comply with any or all the regulations of the State for the suppression and prevention of the disease, and swine plague broke out among his or their hogs.

2. The State should be held liable to the full value—as market animals only—of domestic swine when any outbreak occurred among such that could be traced directly to imported hogs or some negligence on the part of the State authorities, or through any action or want of action of any railroad officials or other common carriers, whereby the disease was introduced into or extended over the State.

(The State and central authorities must eventually regulate the relations, responsibilities and obligations of common carriers with regard to the extension of contagious and infectious animal diseases over the country, both with reference to intra and inter-State commerce.)

Whether or not the State should be held responsible for the negligence of owners of infested herds, and to what extent, and what should be the penalties placed upon owners or others guilty of misdemeanor in regard to swine plague, are questions I will not take upon myself to decide or even give an opinion upon, as they belong to legislators.

One thing must not be forgotten. Legislators must protect the rights of the State, and not award remuneration except where it belongs, as well as be just to the rights of the owners of diseased domestic animals. Owners who fail to conform to the law in every minor detail should never receive remuneration for any action on the part of the authorities.

COMPARATIVE LESSONS OF BRAIN WOUNDS.

BY DR. G. ARCHIE STOCKWELL, F.Z.S.

(Written especially for the AMERICAN VETERINARY REVIEW.)

(Continued from page 418.)

Atop of this a number of experiments personally undertaken by means of domestic and domesticated animals, seems to demonstrate conclusively the comparative innocuousness of brain wounds with free openings; as a rule they are less fatal, and more amenable to surgical measures, in ratio to loss of tissue, than solutions of muscular continuity or fractures of long bones, provided always that the demands of *sanitation, antisepsis* and *drainage* be complied with. In all these cases hemorrhage was slight as compared with the area of the lesion, and each and all exhibited large openings into the cranial vault and through the meninges, large suppurating surfaces and great toleration of the knife.

In contrast to the foregoing are two cases that terminated fatally, the one a patient of my own, the second that of a neighboring practitioner, and by whose favor I was present at the autopsy.

1. The details of this case are almost identical with those of the Norwegian (No. 4), as already given, the wound having been inflicted by the same saw. At first progress was favorable, but by neglect to comply with directions, the external wound closed, and I was summoned to find the man in convulsions. The prejudices of friends and relatives would not permit an incision into the cerebral cavity, and with a second convulsion life terminated. At the post-mortem two ounces of pus were found walled up within the cerebral substance!

2. A young man was wounded by a 22-100 calibre bullet from a pocket pistol, the missile entering half an inch to the right of the median line of forehead, and one and one-fourth inches above the superciliary ridge. For a time he did well, a purulent discharge continuing from the wound for about two months. At last *hernia cerebri* appeared, and following the

books, was regarded as a *nolle-me-tangere*. The flow of pus stopped, evidences of compression supervened, followed by death. *Because the pus was surrounded by cerebral tissues* no measures were taken for relief! The autopsy revealed above three ounces of pus easily accessible in that it was situate less than an inch from the external opening of the wound. The bullet was found two inches farther back, imbedded and encysted in the right posterior lobe, its track practically invisible, conclusively demonstrating it at least was out of the way for harm.

The first series of cases illustrate the necessity, first and foremost, in injuries involving the brain itself, of *free drainage*. Therein lies the whole secret of what, in the light of the teachings of the hour, were deemed miraculous recoveries. In the very magnitude of the wound and laceration lay the elements of safety (1) in the avoidance of compression, and (2), in the reduction of concussion to a minimum.

In the experiments before mentioned, undertaken upon lower animals, every case recovered promptly and readily where the wound was persistently kept open, with free escape for inflammatory products, and with less detriment to general health than commonly accrues to injuries and wounds of other portions of the physical economy; and the exceptional freedom from shock and surgical fever and reflex phenomena was especially notable.

I have already spoken of *hernia cerebri* as a *bugbear*, for such it truly is, and little reflection will convince the most skeptical that the "masterly inactivity" inculcated regarding surgical interference is a gross error resultant upon blundering misconception. For instance, Nancrede, while discussing the subject of cerebral hernia, voices the opinion of the medical profession generally when he says*: "*The less done the better, as the cause primarily is loss of support!*" and, again, that interference "*must be avoided, especially when granulations are springing upon or around the protuberance, as we thus remove pressure and encourage growth!*" Atop of all this he insists upon resort to compression with a view of forcing the mass back upon its matrix.

* *International Cyclopædia of Surgery.*

High as this author deservedly stands, the impression will assert itself that those who corroborate and voice such teachings have never chanced to observe the brain in any animal possessed of the full vigor of life. Nothing can be further from the truth than to imagine the cerebral organ a soft, pulpy, pudding-like mass, or a gelatinous substance such as it sometimes appears after death. On the contrary, it is a firm and elastic organ, possessing peculiar homogeneity; its individuality is such that it leaves its impress upon the inner table of the skull during development and growth. Again, the discussions excited regarding *hernia cerebri* for the most part deal with *effects* rather than *causes*, and pathology has been ignored in the desire to secure "*safe treatment*."

In fact *hernia cerebri* may be the sequel of three different conditions: 1. A tumor, composed of partially or wholly disorganized brain substance. 2. Brain matter, protruded by inflammatory processes within the cranial vault. 3. Exuberant or excessive granulations, springing from damaged cerebral tissues. What then?

If a hernia is composed of disorganized tissue, certainly the animal economy derives no benefit from its retention; it is a clog and excrecence, is probably irritative, and therefore the more quickly removed the better, as a means of checking or forestalling more grave disturbance.

If protruded by inflammatory processes, is it not *prima facie* evidence of danger lurking behind—an accumulation of pus perhaps, as in the two fatal cases above cited; and in such case does not *common* as well as *surgical* sense dictate an outlet should be afforded for such inflammatory products, and a portion of cerebral tissue sacrificed, if need be, for the preservation of the whole? That the knife is always demanded is not certain. No doubt aspiration would fulfill all indications oftentimes.

Exuberant granulation is repressed by the free use of scalpel or caustics in accordance with demand when occurring in other parts of the body, therefore it is a logical sequence that the same should not be neglected merely because the tissue is cerebral, especially as all evidences go to prove that the brain is most

tolerant, and the drain of sloughing (within limits) less taxing to the economy at large.

Cerebral hernia is never of immediate or early occurrence, as it would be if the claim set up by Nancrede and his supporters were true; it is invariably a secondary complication, and commonly attendant upon suppurative and reparative processes. All support has frequently been removed from considerable areas of healthy brain, and without the slightest indication of falling, sinking or protrusion of the injured surfaces; and in the case of the canine before alluded to, above all others, there should have been such collapsing of cerebral walls, yet the wound not only retained its original form and contour until healed, but the lost substance of the brain was replaced by act of granulation precisely the same as with muscular tissue. Again, the hernia is often found protruding from small openings, giving evidence of considerable force behind, as in the case of the unfortunate wounded by a 22-100 bullet, and this force can only be a powerful effort on the part of nature to free the brain from impending fatal pressure dependent upon inflammatory products; it is the *pouting of the abscess* in fact, and the merest tyro in pathology need not be told that *compression* would but illy compensate for the knife in furuncle or paronychia. Yet, without classifying causes, we are told that in this one, the most severe and fatal form of abscess, and where absorption positively *cannot* take place, the knife must be avoided, and compression alone resorted to!

It would seem to me, at least, that further hesitation or doubt as to the propriety of employing knife, aspirator, cantery or ligation, as occasion may suggest, for the *removal* of cerebral hernia that is already giving evidences of mischief, is most reprehensible; personally, I would not delay or await such manifestations. Witness the case of Doctor ————'s* daughter, reported in the *Journal of the American Medical Association* during February of the current year, and the happy sequel to ligation of such a

* The name has escaped me, and my copy of the *Journal* is not at the moment available. The account is of a large cerebral tumor removed by ligation, and occurs on page 150 of the *Eighth* Volume.

tumor! Or consult the "Medical and Surgical History of the Civil War," where in not a single instance—and there are several examples given by a surgeon who was "wise beyond his time"—is there an untoward result.

One word more in connection with this subject. The experiments with intradural inoculation as practiced upon lower vertebratæ, has a direct bearing upon the treatment of cranial wounds and fractures, and leads me to corroborate a recent assertion of Dr. Roberts, of Philadelphia, that trephining is attended with trifling risk if carefully performed under antiseptic precautions—"less than the amputation of a digit or removal of a metacarpal bone." The comparative result is *three per cent.* of futility in the former, against *four and one-half per cent.* for minor amputations, while the benefits accruing to the trephine are immeasurably overwhelming! All depressed fractures, all spiculæ of bone, all bullets or other foreign substances or their fragments, within or upon the brain, are a perpetual menace to life so long as they remain. By the trephine epilepsies and choreas of long standing have been relieved, oftentimes permanently, one author alone claiming a ratio of *fifty per cent.* Insanity has fled before the removal of extravasations of blood, evacuations of pus, and irritation and probable (ultimate) fatal compression avoided. I recently learned also that Drs. Fenger and Lee, of Chicago, aspirated a cerebral abscess by means of a hypodermic syringe with the happiest of results. Cerebral localization, yet in its infancy, with the drainage tube as an auxilliary, opens up a new era in cerebral surgery and pathology, both veterinary and general. The opportunities afforded veterinarians for the further development of cerebral pathology exceed those of the general practitioner, especially as to its relations to epilepsy, chorea and paralysis, for these, despite the amount of literature specially devoted thereto, are yet little more than unsolved enigmas. Cerebral localization in man and the lower animals is but the key that will unlock the mystery now attendant upon diseases of the central nervous system, along with their attendant reflex phenomena.

REPORTS OF CASES.

INCOMPLETE FRACTURE OF THE METACARPAL BONE.

By W. PENDRY, D.V.S.

On September 30th I was called to see a fine team of six-year-old carriage horses, said to have been hurt by coming in contact with some iron girders laying on the street. The one horse had received several bad cuts, but of no particular nature, which unfortunately was not the case with the other horse, he having received a far more serious injury, being a badly lacerated wound on the outside of the off fore leg, about six inches below the carpal joint; the tendinous portion of the lateral extensor of the phalanges being completely cut through and the periosteum removed, so that the smooth surface of the bone was exposed, showing an oblique, incomplete fracture of the metacarpal, extending for about four inches from forward backwards. After examination I gave it as my opinion that the injury could be repaired with proper treatment. The horse with the more serious injury was removed to the owner's stable in an ambulance and placed in slings. An attempt was then made to unite the severed tendon, but the upper portion was found to have contracted and could not be reached, even after a dissection of about two inches had been made for it. The hemorrhage being considerable and the lower portion of the tendon becoming so enlarged and congested, I decided to close the wound by drawing together what little skin was left by suture and to dress antiseptically, using a solution of sulphate of zinc and carbolic acid. In a few days the stitches sloughed out, being soon followed by a bad sloughing of the tendinous portion of the extensor, the periosteum coming away at the same time, leaving the surface of the metacarpal bone. The sloughed portions were removed as fast as possible and dressed as before stated. In ten or twelve days I had a very healthy looking wound, which received a fresh dressing each day, without any further complication, except a considerable congestion of the back tendons, which happily subsided in a week or so with simply a slight cutaneous slough.

What I consider worth recording is the—in my opinion—remarkable rapidity nature displayed in repairing the injury in this case. The horse had to be literally carried from the ambulance to his stable, the foot knuckling completely over when trying to walk, and in five weeks was able to travel the length of the stables and back, with only once slightly tripping. The granulations were of course controlled by pressure, and cut down, when necessary, with a fifty per cent. solution of the chloride of zinc; the leg being kept straight with a heavy sole leather legging made to fit the leg from the foot to the elbow, over the dressing and bandages, and secured with other bandages; the result is, that there is very little elevation of the location of injury and a pretty straight leg. Within six weeks the case was discharged as convalescent, with instructions to give three months perfect rest.

BOOK NOTICES.

MANUAL OF COMPARATIVE ANATOMY OF THE DOMESTICATED QUADRUPEDS. By N. Hormasji Edalji Sukhia.

A concise abridge of the osteology, syndesmology and myology of our domestic animals, condensed in a small volume of some 250 pages, which the author, Demonstrator and Lecturer on Anatomy at the Veterinary College of Bombay, has issued with the object of facilitating the studies of the younger students of anatomy. Not ignoring the superiority and advantages that are presented to the students of anatomy by such works as those of Steele, McFadyean, Fleming and Strangeway, Mr. Sukhia believes that many of the difficulties that are encountered by the beginner will be overcome by a careful reading of his little Manual. It is undoubtedly a good work, which does credit to the ability of the author, containing an enormous amount of well collected information, which we believe will be most valuable to the beginner in this important branch of medical studies.

SOCIETY MEETINGS.

MASSACHUSETTS VETERINARY ASSOCIATION.

The regular meeting of the Massachusetts Veterinary Association was held in Boston September 28th, 1887, at 7:30 o'clock, P. M., President John S. Saunders in the chair.

There were present Drs. Blackwood, Lee, Marshall, Howard, Osgood, Peters, Saunders, Smith, Stickney, Winchester, K. Winslow, and Cattle Commissioner A. W. Cheever.

On motion of Dr. Winchester the reading of minutes of the previous meeting was dispensed with, and the consideration of certain new business before the Association and adoption of a revised code of ethics were laid over to the next meeting, to be held October 26th.

The Executive Committee reported they were awaiting the presentation of credentials of the following gentlemen who had applied for membership, viz.: J. C. Fogg, V.S.; Wm. Ferguson, M.R.C.V.S.; Wm. H. Hitchings, D.V.S.; C. P. Lyman, F.R.C.V.S.; Roland Lord, M.R.C.V.S.; Kenelin Winslow, M.D.V., and could not report on the applications until the credentials were sent in for examination.

The meeting then listened to the following paper by A. Peters, M.R.C.V.S., of Boston:

INFECTIOUS BOVINE PNEUMONIA.

Mr. President and Gentlemen;—I do not know that it is a matter of record that there is an infectious pneumonia affecting the bovine race, and I therefore thought that it would be interesting to you to read you a few facts concerning it. Last summer I was requested by the Cattle Commissioners of the State of New Hampshire to repair at once to South Lyndsboro, in Hillsboro county, to investigate an epizootic of pneumonia among the young cattle in Hillsboro and Cheshire counties.

I left Boston Friday morning, July 29th, for South Lyndsboro, proceeding at once to the farm of a Mr. Levi Spalding.

Mr. Spalding manages a large tract of land, comprising what was formerly a number of farms, his principal pasture covering most of a large hill known as Lyndeboro Mountain. During the summer and spring a number of deaths have occurred among the cattle pastured on Lyndeboro Mountain, from what I should designate as an infectious pneumonia, which attacked yearlings chiefly. The disease appeared early last spring, before the cattle were turned out to pasture, among some cows which came from Concord, Mass.; one died then, and another soon after they were turned out; three others which were sick recovered.

Since then the deaths have been confined to yearlings, I believe, seven of which died; there were also in this pasture (August 1st, 1887,) three yearlings which were sick, but they seemed to be recovering. I examined two of these:

No. 1.—Red yearling heifer, temperature 102° , moist rales on the right side, no marked dullness on percussion.

No. 2.—Yearling steer, red, with white face, temperature 103° , other symptoms similar to No. 1.

No. 3.—Black yearling heifer: was too wild to approach, but seemed to be convalescing. Mr. Spalding said she had lost a good deal of flesh within three or four weeks.

In addition to these creatures Mr. Spalding had a cow, five years old, on a farm at the easterly end of the mountain, which presented similar symptoms to those manifested by the young cattle on the mountain. Her temperature was, Saturday morning, July 30th, $102\frac{3}{8}^{\circ}$, breathing rapid and jerky, no marked dullness on percussion, but on auscultation moist rales could be heard over both lungs, husky cough, conjunctivitis, sore throat, skin dry and scaly, and cow somewhat emaciated. The milk was said to have a bitter taste, and that morning had to be thrown away.

In a pasture on the Dunkley farm, on the north side of the mountain, there was another cow which had been sick, but was evidently convalescing, belonging to Andrew Holt, brother of Dr. Holt, Surgeon-General of Massachusetts.

On the morning of July 31st, Dr. Holt and myself examined this cow carefully. Her temperature was $101\frac{1}{2}^{\circ}$, breathing rapid and jerky, no marked dullness on percussion, moist rales over both lungs on auscultation. She had aborted a few weeks before. At that time she was probably in a high state of fever, and abortion is not uncommon among cows when the temperature runs very high.

After finishing our physical examination, the animal was destroyed and a post-mortem examination made.

Autopsy revealed disease of both lungs, the small bronchii being full of a frothy material, the lungs not collapsing to the same extent as in a state of health after opening the thorax, and they presented an appearance of a case of pneumonia undergoing resolution. The postero-inferior portion of the right lung still had a somewhat hepatized appearance. The peritoneum showed patches of inflammation, appearing in places to be thickened and congested, slightly ulcerated in a few spots.

The other organs, as far as a hasty post-mortem would allow, appeared healthy.

The animals attacked with this disease die in the course of the first four or five days, during the congestive stage. If they live beyond this period they slowly recover, but lose a good deal of flesh in consequence. Yearlings, on account of their youth, suffer most seriously; milch cows are occasionally attacked, owing to the depleting influence of lactation; other cattle appear to have a resisting power to the influence of the infectious principle.

Outbreaks of a similar disease were reported from various towns in Cheshire county earlier in the season, but inquiry among the farmers there showed that very little sickness had existed among the cattle in that locality this summer, and at the time of my visit the young cattle in the pastures of Cheshire county appeared to be healthy. At the time of making the post mortem on the Holt cow I inoculated some test tubes of agar agar from the fresh cut surface of the hepatized portion of the lung. In one of these test tubes an almost pure growth of a small micrococcus developed. I got a pure cultivation of this in a second generation on agar agar. It formed a slowly growing white colony on the surface of agar agar, and formed small colonies close together along the needle track.

From this cultivation I inoculated some test tubes of veal broth, August 17th,

and after allowing the micrococci to develop in it until August 24th, I inoculated two guinea-pigs from the culture. For this purpose I used a sterilized hypodermic syringe, and injected the culture under the skin of the abdomen. To distinguish these guinea-pigs, I will call them No. 1 and No. 2.

August 27th, three days after inoculation, No. 1 was noticed to have some difficulty in breathing. Respiration was rapid and somewhat labored, and when held up close to the ear the respiratory murmur was so harsh and loud that it could be easily heard over both lungs. Otherwise he did not appear to be particularly sick.

August 28th—No. 1 appeared the same as day before.

No. 2 showed symptoms similar to No. 1's, but not so well marked.

August 29th—Pig No. 1 is killed. The autopsy showed the viscera in an apparently healthy condition, excepting the lungs. The anterior lobe of the left lung is hepatized, and the posterior portion of the right lung very much congested.

Several test tubes of agar agar are inoculated from the diseased portions of lung.

Pig No. 2 is kept for further observation.

September 2d (Friday)—Pig No. 2 seems sicker to-day than at any time since he was attacked.

September 9th—Pig No. 2 has steadily improved since Sept. 2d, and is now nearly well.

Examined cover glass preparations from second generation of cultivations from lung of pig No. 1 (second generation being raised in order to get a pure culture, the first being mixed).

The cultivations present the same appearance in agar agar as those used to inoculate the pigs, and also have the same appearance under the microscope.

Sept. 15th—Guinea-pig No. 2 appears well again, and is rapidly regaining the flesh which he has lost.

I had a telegram on the morning of Sept. 13th from the New Hampshire Cattle Commissioners, to proceed to Cornish, N. H., and investigate a supposed outbreak of contagious pleuro-pneumonia.

Cornish is in Sullivan county, north of Hillsboro and Cheshire counties. I immediately repaired to the scene of action, and found a similar state of affairs prevailing to those witnessed on Lyndeboro Mountain earlier in the season. Here I find that a number of steers, chiefly two-year-olds, brought from the West a few weeks ago, have been turned out to pasture.

They were brought on from Iowa, three or four weeks before my visit, passing through the Chicago stock yards on their way. The drove originally numbered 110, but small lots were sold, from time to time, until only 44 remained. The week before my visit some of these sickened, four died, and one was killed, so that when I saw them (Sept. 14th), but 39 remained. Five of these were sick, their symptoms resembling those of the sick cattle seen on Lyndeboro Mountain the last of July. Of the five, four were convalescing and one was still in the acute stages of the disease, having a temperature of $105\frac{1}{2}^{\circ}$ F.

I had the animal which had most recently died exhumed for an autopsy. As he died Sunday night and was buried Monday morning, he was still (on Wednes-

day, Sept. 14th) in a tolerably good state of preservation. Upon opening the thoracic cavity and examining the lungs, I found them both to be very much congested, but hepatization had not commenced, and they did not display the slightest evidences of contagious pleuro-pneumonia.

Other lots of these steers, sold before sickness appeared among them, are, I was told, doing well. One lot sold since they were attacked, I heard, had one or two sick among them.

I think the outbreak at Cornish is chiefly due to the fact that these young cattle, coming from a distant part of the country, and after a long, fatiguing journey, were more susceptible to such a disease than cattle which had been in the locality all summer.

The farmers of the vicinity, knowing that these cattle had come through the Chicago stock yards, where there was an outbreak of contagious pleuro-pneumonia last year, were naturally very much alarmed. Dr. F. C. Wilkinson, of Claremont, and Dr. Geo. H. Farnsworth, of Rutland, Vt., two local veterinarians, made a post-mortem examination of one of the steers, and gave it as their opinion that the disease was contagious pleuro-pneumonia. This greatly increased the public excitement.

When I made the post-mortem on the animal I had dug up, there were twenty or thirty farmers present, and the selectmen told me if it had been generally known that I was coming, the audience would have been very much larger. Of course, they were very much relieved to find that the disease was not contagious pleuro-pneumonia.

Conclusions.—1. From the above we can safely conclude that this is a specific infectious lung disease, due to the presence of a small micrococcus.

2. That its effects are shown on the lungs, whether inhaled or introduced into the circulation in any other way.

3. That animals attacked by it may entirely recover.

4. That the germ may be easily isolated and cultivated.

Animals attacked by it should be isolated until they have entirely recovered.

Animals that die should be buried, or, better still, cremated.

If they are worth treating, the same treatment should be adopted as in ordinary sporadic pneumonia.

Whether one attack gives immunity from subsequent attacks, remains to be determined.

Further study of the micro-organisms causing the disease may be productive of additional knowledge concerning its character.

Horses pastured with cattle suffering from the disease do not show symptoms of pneumonia; a number of horses being in the Lyndeboro pasture when the cattle were sick. I was told that the horses all had "pink eye" early in the summer. Whether this disease and equine influenza bear any relation to each other, I cannot say.

At the conclusion of the paper, Dr. Peters showed microscopical preparations of the cultivations of the germ of this disease.

Dr. Osgood said that he had on one occasion met with similar cases in a lot of young bulls shipped from Chicago. They had been a week or ten days in

transit, and several of them had died. A post-mortem examination revealed disease of the respiratory organs only, viz., a congestion of the lungs and bronchia, and he diagnosed the disease an infectious broncho-pneumonia, the exciting cause being exposure in transit. These cases had been said to be, by some one who had previously examined them, Texas fever, but in his opinion they were cases similar to the ones described by Dr. Peters in his paper. The animals affected were shut up with Jerseys, and if the newcomers had Texas fever, in all probability it would have appeared among the Jerseys, which, however, did not happen.

Dr. Winchester said that the essayist had spoken of the disease as *infectious*, but was it not enzootic, or miasmatic? Has not every specific disease a germ, and could he not take the germ of equine pneumonia and cultivate it?

Dr. Marshall said he thought the entire cause might be the climatic conditions.

Dr. Winchester said the Cattle Commissioners of Vermont had lately called on the Massachusetts Board with specimens of this lung disease, thinking they had an outbreak of contagious pleuro-pneumonia. Their cases had been examined by the same parties who had previously pronounced the cases investigated by Dr. Peters in New Hampshire to be contagious pleuro-pneumonia. The hepatized portions of the lung in these cases seem to be different from ordinary hepatization, in that they won't sink in water. The mortality is about 50 per cent.

At the conclusion of the discussion, on motion of Dr. Howard, a unanimous vote of thanks was tendered Dr. Peters.

Adjourned to October 26th, Wm. H. Hutchings, D.V.S., being appointed essayist for that meeting.

L. H. HOWARD, Secretary.

NEW JERSEY STATE VETERINARY SOCIETY.

The New Jersey State Veterinary Society met in convention at the United States Hotel, in the city of Newark, N. J., on Thursday, October 27th, with Dr. J. C. Corlies in the chair.

Although as now incorporated the membership consists exclusively of graduates of chartered veterinary colleges, yet the attendance was larger than at some of the meetings of the old Association, which admitted both graduates and non-graduates to membership, thus showing that the veterinary profession of New Jersey recognizes the imperative necessity of a complete emancipation from quackery and its associations.

The minutes of the reorganization meeting were read by the Secretary and adopted.

The Secretary presented a certified copy of the certificate of incorporation, which he had received from the Hon. Henry C. Kelsey, Secretary of State, at Trenton.

Appropriate resolutions were passed in the matter of the death of Dr. Edmund Chambon, of Jersey City, one of the men who assisted in the establishment of the Association on its present basis. Dr. Chambon stood high in the

profession, he having graduated with distinction at the Imperial Veterinary School at Alfort, France.

The Board of Censors reported favorably on the application of Dr. W. H. Mook, of Metuchen, and he was unanimously elected to membership. The other applicants, not being graduates, were rejected.

Many letters of encouragement had been received by Dr. Lowe from eminent veterinarians, at home and abroad. Letters from the following gentlemen were read amid enthusiasm :

Professor Liautard, Dean of the American Veterinary College; Prof. McEachran, Principal of the Montreal Veterinary College; Prof. Chas. P. Lyman, of the Veterinary Department of Harvard University; Prof. James Law, of Cornell University; Prof. Huidekoper, of the Veterinary Department of the University of Pennsylvania; Prof. James L. Robertson, of the American Veterinary College; Prof. A. H. Baker, of the Chicago Veterinary College; Dr. Ezra M. Hunt, Secretary of the New Jersey State Board of Health; Prof. Chas. B. Michener, of the American Veterinary College; Dr. George Fleming, of London, England, and others.

An able address was delivered by President Corlies on the recent equine epidemic in New Jersey. While he admitted that isolated cases of spinal meningitis occurred in different parts of the State, yet he considered that it was a misnomer to apply this term to the recent outbreak. He did not think that there was any name for it that was comprehensive, consequently he had coined a name himself—"carbo-hæmia." The Doctor claimed that the disease was due to an excess of carbonic acid generated in the system—that the blood was not oxygenized. He had made two post-mortem examinations, and found the blood of a venous character, intensely black, with ante-mortem heart clots, together with other marked lesions of like character. There were no traces of lesions of the brain or spinal cord.

Dr. Corlies' remarks led to a prolonged, but beneficial, discussion on differential diagnosis between spinal meningitis, typhoid influenza, and carbo-hæmia, in which Drs. Nayler, Mook, Sherk, Krowl, Vogt, Mercer, Satter, De Clyne and Lowe took part. So much interest was taken and clinical experience related, that some of those present thought that the time had been better occupied than if they had listened to an elaborate essay.

The subject of veterinary legislation again received a due amount of attention, and it was the sense of the meeting that the proposed bill to regulate the practice of veterinary medicine and surgery should be modified and so drafted that both classes of practitioners would be allowed to register—the graduates as "Regular Practitioners," and the non-graduates as "Existing Practitioners," but that the time of allowing the latter class to register would be limited to six months after the passage of the act. While by this method all those who have assumed the right and are practicing for a livelihood would be allowed to register and continue such practice, provided they registered within the specified time, yet it made a distinction between the educated veterinarian and the empiric. At the end of the six months a complete register of all those non-graduates who shall have availed themselves of the opportunity could be obtained, and after that time only graduates could register, and no new name could be added to the regis-

ter of "Existing Paactitioners," so that in the near future benefit would be derived from such legislation. *

Dr. Krowl promised to read a paper on "Phlebotomy in Veterinary Practice."

It was decided to hold the next meeting of the Association in Trenton. A banquet was held in the evening.

WM. HERBERT LOWE, D.V.S., Secretary.

The meeting of the Long Island Veterinary Society was held on the 21st of December.

The New York State Veterinary Society held one of its quarterly meetings on the second Tuesday of December.

The annual meeting of the Kansas State Veterinary Medical Association was held on the 16th of December, at the Fifth Avenue Hotel, at Topeka.

CORRESPONDENCE.

PATHO-BIOLOGICAL LABORATORY, STATE UNIVERSITY OF
NEBRASKA.

My Dear Sir :

I beg to call your honorable attention to the fact that this Laboratory has been established *for original research into the nature and causes of the contagious and infectious diseases of animal life*. It has a general working-room, supplied with all the necessary instruments and books of reference; a cultivating room; an autopsy building, and room for raising and keeping the small animals generally used in experimentation.

While established entirely for investigation, still it is my desire to make the Laboratory as useful to the country as possible; hence, I think that its advantages should be offered to Boards of Health, Live Stock Commissions and Educational Institutions that may desire to have some attaché instructed in these special branches. I can truly say that this Laboratory offers better advantages for such work than any other in the country, as we are constantly busied in original investigations upon quite a number of diseases, and can thus give those desiring it an opportunity of at once proceeding in such work, and the immense advantage of

publishing their own, which should be a direct endorsement of their competency. We will supply workers with animals and everything necessary, except a microscope, slides, and covering glasses. In order to cover the expense of material used, a fee of \$100 will be charged.

Time of attendance will not be limited; but as our rooms are small and only originally intended for our personal use, we can accommodate but two persons at once. No one but graduated physicians or veterinarians will be admitted, and such persons must have the endorsements of Boards of Health, Live Stock Commissions, or president of a university or college, with which they must be connected.

Your obedient servant,

FRANK S. BILLINGS, Director.

LINCOLN, Neb., Nov. 28th, 1887.

VETERINARIAN WANTED.

WASHINGTON, Mo., Dec. 5, 1887.

Editor American Veterinary Review:

DEAR SIR.—Please post the following on your college bulletin:

A splendid opportunity for a veterinary surgeon in a beautiful city of 5,000 inhabitants, and a rich and wealthy surrounding country. We have a "quack" veterinarian here, who is humbugging our farmers in a shameful manner and is making "big money."

If a graduate from your college would locate here, he could procure the confidence and practice of all of our intelligent horse and cattle breeders.

We have several *large* stock breeding farmers, who handle scores of fine horses and cattle, whose patronage could be *easily* obtained and a well paying practice established by locating here permanently.

For further particulars address

O. L. MUENCH, Ph.G., M.D.

PRACTICE TO DISPOSE OF.

For immediate disposal, an old-established veterinary practice in New York city, with everything pertaining to the practice. Terms reasonable. Satisfactory reasons why the present owner wishes to retire.

Address

E. F. STEEL,
P. O. Station A, N. Y. City.

NEWS AND SUNDRIES.

THE NATURE OF TETANUS.—Dr. Shakespeare, pathologist to the Philadelphia Hospital, read a paper upon Tetanus before the Section of Pathology at the International Congress, in which he related a series of experiments consisting in inoculations of rabbits with material obtained from the medulla and spinal cord of a horse or a mule which had died of traumatic tetanus. The inoculations were based on the methods adopted by Pasteur in rabies, and included injections beneath the cerebral dura mater, as well as subcutaneous and intermuscular injections. He concluded from these researches that traumatic tetanus of the horse and mule is sometimes, if not always, an infectious disease, transmissible to other animals, and therefore possibly to man; and that the virus, elaborated and multiplied during the progress of the disease, is capable of reproducing the disease in other animals by inoculation beneath the dura mater. The virus is contained in the medulla and spinal marrow, and, like that of rabies, is capable of attenuation by exposure to dry air at a temperature of summer heat. It also resembles the rabic virus in producing more intense effects when inserted beneath the cerebral dura mater than when injected subcutaneously or between muscles. Dr. Shakespeare reserved conclusions as to the prophylactic effect of inoculations of the attenuated virus, and pointed out that his results, in connection with those of Nicolayer, Rosenbach and others, suggested forcibly the dependence of traumatic tetanus, both in animals and man, upon the action of a specific infectious virus, and the probability that man may acquire the disease from animals—notably the horse.

A CONGRESS TO DISCUSS TUBERCULOSIS.—A congress of physicians and veterinarians, with the view of discussing the subject of tuberculosis in man and in animals, is announced to be held from July 25th to the 31st, in the rooms of the Faculty of Medicine, Paris. Professor Chauveau will preside.

PERIPNEUMONIA AND COW'S MILK.—A series of investigations (Lecuyer, Centr. for Kinderk. May 16, 1887.) has led to the conclusion that the unboiled milk of cows suffering from lung disease is liable to produce croupous pneumonia in human beings, the anatomical appearance of which is like that which occurs in cattle. The autopsies upon two children who had died under similar circumstances, and with clinical phenomena similar to those which are seen in lung disease in cattle, showed thickening of the pleuræ, extensive adhesion of the costal to the pulmonary pleura, dilation of the lymph space extending from the sub-pleural to the interlobular connective tissue, and infiltration of the interlobular connective tissue with bloody serum. At the time when the two children were taken sick an epidemic of lung disease was prevailing among the cattle in their vicinity. This coincidence is important, and should excite pathological investigation in this direction.—*The Archives of Pediatrics.*

AGED ANIMALS.—We find mention of the age attained by various animals in our English namesake, as follows: "A notice lately appeared of the death of a brown water spaniel at the age of 28 years. She had belonged to the same owner from a puppy, and died literally of 'sheer old age.' A few months before a cat died at the age of 22 years and 2 months. These are very unusual ages, though it is probable that some individuals have lived still longer. Herbivorous animals are generally thought to outlive carnivorous ones; and of the former class those dedicated to labor appear to furnish the greatest number of instances of longevity. Two years ago a donkey died at Cromarty that was known to be at least 106 years old. It could be traced back to the year 1779, when, at an unknown age, it came into the hands of the then Ross of Cromarty, and it lived in the same family, 'hale and hearty,' until a kick from a horse ended its career. No horse is known to

have attained to anything like such an age as this; but a few have lived to ages varying from 40 to 50 years. A famous old barge horse died at Warrington in his sixty-second year; and the oldest horse known in New York was, until quite recently, doing steady work there at 38 years of age. A few months ago, also a mule 46 years old died at Philadelphia."—*National Live Stock Journal*.

GLANDERED HORSES IN MAINE.—The cattle commissioners recently paid \$175 for three glandered horses condemned and destroyed at Oldtown. There is no question but horses diseased with glanders ought to be put out of the way, but there is a question whether we want a law that will pay such prices in compensation for stock already rotten with disease.—*Maine Farmer*.

GLANDERS IN TIPPECANOE COUNTY, INDIANA.—We take the following extract from the *Indiana Farmer*, Indianapolis: "Considerable excitement has been aroused in the vicinity of Farmers' Institute, Tippecanoe County, Ind., over the discovery that glanders, in very serious form, has broken out among the horses in that neighborhood. A veterinary surgeon found two horses belonging to A. H. Crouse very bad, and by order of the board of health officer they were shot. Other horses have contracted the disease, it is claimed, but the owners deny that it is the glanders, and decline to kill their animals. The veterinary pronounces the disease acute glanders."

GLANDERS IN THE CROW RESERVATION.—The following was sent from Washington last Saturday: "The Secretary of the Interior has received, through the Commissioner of Agriculture, a communication from Gov. Leslie, of Montana, transmitting a report from the veterinary surgeon of that territory, relating to the disease known as glanders, existing in horses within the Crow Reservation, and also a letter from Indian Agent Williamson on the same subject. The veterinarian says that after making an investigation of the character of the disease, during which several chronic cases of glanders were discovered and the animals destroyed, he is fully satisfied that the disease prevails to a limited extent among the horses on the reservation, and says that he

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regards it as most important that steps be taken to stamp out the disease while it is in its incipency. The Indian agent joins the Governor and the veterinarian in urging immediate action and asks that provision be made to recompense the Indians for affected horses killed. The Commissioner of Agriculture recommends that as the Bureau of Animal Industry has no jurisdiction within the reservation, the Interior Department take such steps as are necessary to cause the destruction of the affected horses in order to prevent the spread of the disease, and to protect the lives of the people as well as the animals of the adjoining States and territories.—*Nat. Live Stock Journal*.

DEATH FROM GLANDERS IN ILLINOIS.—A young man 24 years old recently died in Lincoln, Ill., with chronic farcy. It seems that he was inoculated last summer in being injured by a horse had which glanders, and which he was fumigating with tobacco smoke.

DEATH OF A WOMAN FROM GLANDERS.—The following account of a horrible death from glanders was sent from Elgin, Ills., last week: "There died at the county poor farm, a few days ago, Minnie Sorenson, who had been a public charge for about three years. Before that time her husband was employed by a farmer of this township. He was prostrated with a virulent disease which baffled the skill of physicians. Finally it developed that he had cared for a horse which was sick with the glanders. The man had been inoculated with the virus. After great suffering he died. His wife, meanwhile, had contracted the fatal affliction from her husband. It appeared in a somewhat milder form. Great abscesses formed, and there were the same symptoms about the nasal passages and throat that are seen in a horse so diseased. No pains were spared to effect a cure, and for a time it was thought the virulent poison was driven from her system. It was but dormant, however, and soon appeared with all its horrible features. None could be secured to attend the sick woman, save self-sacrificing sisters of charity from Chicago. Her agony extended over a period of nearly three years, and death was finally a welcome release."

BITTEN BY A MAD HORSE.—The following report comes from Michigan: "A case of alleged horse hydrophobia exists in the township of Greenfield, Mich. A week ago Richard Reed was bitten by a favorite horse which had been sick and had become vicious. The wound was cauterized after Veterinary Surgeon Murray had pronounced the horse afflicted with rabies. Reed at once had the horse killed. The spinal cord was secured and two white rabbits were inoculated with the virus, and several dogs trepanned and clots of the cord laid on their brains. Reed is a wealthy farmer and is wrought up to a high pitch. He at first decided to wait five days to learn the result of the experiments begun, but changed his mind, and will start for Paris at once to consult Pasteur. Reed is fifty years old."—*Nat. Live Stock Journal*.

QUARANTINED HORSES.—Word comes from De Witt County, Ills., that "the horse disease known as '*maladie du coit*,' that caused such excitement among our stockmen and the assemblage of learned veterinarians from several States, an session of a part of the live stock commission at Clinton, was the occasion to-day of another official visit of Mr. J. M. Pearson, chairman of the commission, from Alton; C. T. Johnston, secretary, from Springfield, and Dr. Williams, of Bloomington, Assistant State Veterinarian. Out of a list of 200 under quarantine they have examined nearly 30 mares, ordered one stallion killed this morning, but will delay the alleged cases longer before ordering any more killed. The disease is abating, as there are but few new cases, and it is thought they can, under the rigid regulations, be soon stamped out. The commission will visit cases in Wapella to-morrow."

SPAYING HEIFERS ON THE RANGES.—Spaying heifers in the west is still going on. Nevada leads in the matter, but Idaho, Utah and Wyoming have done considerable of this unsexing. Texas, also, has spayed large numbers. This process will increase the beef output two years hence, but later on it will cause a heavy deficit. It looks now as if the practice would be continued in order to prevent the over-crowding of the ranges. Spaying increases the hardness of the animal and makes the heifer stock even better rustlers than the steers.—*Nat. Live Stock Journal*.

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